

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 01 FOR PERIODIC TEST-II (2017-18)

SUBJECT: MATHEMATICS(041)

BLUE PRINT FOR PERIODIC TEST-II: CLASS IX

Chapter	VSA (1 mark)	SA – I (2 marks)	SA – II (3 marks)	LA (4 marks)	Total
Real Numbers	1(1)	2(1)	--	--	3(2)
Polynomials	--	--	3(1)	--	3(1)
Pair of Linear Equations in two variables	1(1)	--	--	4(1)	5(2)
Quadratic Equations	--	2(1)	3(1)	--	5(2)
Arithmetic progression	1(1)	--	3(1)	--	4(2)
Coordinate Geometry	--	2(1)	--	4(1)	6(2)
Introduction to Trigonometry	1(1)	2(1)	--	4(1)	7(3)
Triangles	--	--	3(1)	4(1)	7(2)
Total	4(4)	8(4)	12(4)	16(4)	40(16)

MARKING SCHEME FOR PERIODIC TEST-II (2017-18)

SECTION	MARKS	NO. OF QUESTIONS	TOTAL
VSA	1	4	04
SA – I	2	4	08
SA – II	3	4	12
LA	4	4	16
GRAND TOTAL			40

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SUBJECT: MATHEMATICS

MAX. MARKS : 40

CLASS : X

DURATION : 1½ HRS

General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains **16** questions divided into four Sections A, B, C and D.
- (iii). **Section A** comprises of 4 questions of **1 mark** each. **Section B** comprises of 4 questions of **2 marks** each. **Section C** comprises of 4 questions of **3 marks** each and **Section D** comprises of 4 questions of **4 marks** each.
- (iv). Use of Calculators is not permitted

SECTION – A

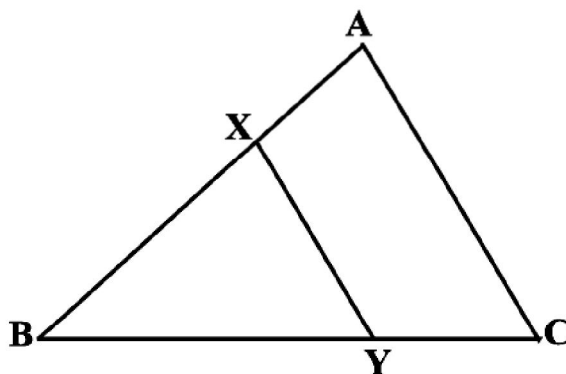
1. State Euclid's division lemma
2. Find the value of k for which the system of equations $x - 2y = 3$ and $3x + ky = 1$ has a unique solution.
3. If $2x$, $x + 10$, $3x + 2$ are in A.P., find the value of x .
4. If $\sin A = \frac{1}{2}$, find the value of $\frac{2 \sec A}{1 + \tan^2 A}$.

SECTION – B

5. Using Euclid's division algorithm, find the HCF of 2160 and 3520.
6. If $\sec A + \tan A = m$ and $\sec A - \tan A = n$, find the value of \sqrt{mn} .
7. Find the value of k if the points $A(2, 3)$, $B(4, k)$ and $C(6, -3)$ are collinear.
8. Find the roots of $\frac{1}{x} - \frac{1}{x-2} = 3, x \neq 0, 2$

SECTION – C

9. In the below figure, the line segment XY is parallel to side AC of ΔABC and it divides the triangle into two parts of equal areas. Find the ratio $\frac{AX}{AB}$.



10. Find the quotient and remainder when $4x^3 + 2x^2 + 5x - 6$ is divided by $2x^2 + 3x + 1$.
11. If the sum of the first 14 terms of an AP is 1050 and its first term is 10, find the 20th term.
12. Find the roots of the equation $5x^2 - 6x - 2 = 0$, by method of completing the square.

SECTION – D

13. Prove that “If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then the other two sides are divided in the same ratio.”
14. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars? While driving, the driver should maintain the speed limit as allowed. Comment
15. Find the area of the quadrilateral whose vertices, taken in order, are $(-4, -2)$, $(-3, -5)$, $(3, -2)$ and $(2, 3)$.
16. Evaluate without using tables:
$$\frac{\sec \theta \operatorname{cosec}(90^\circ - \theta) - \tan \theta \cot(90^\circ - \theta) + (\sin^2 35^\circ + \sin^2 55^\circ)}{\tan 10^\circ \tan 20^\circ \tan 45^\circ \tan 70^\circ \tan 80^\circ}$$